NMDCAT

SUPER FINAL PAPER–3

Total MCQs: 200 **Max. Marks: 200**

BIOLOGY

Q.1 Plasma membrane allows _____ substances to pass through it.
a. Water soluble only b. Lipid soluble only
c. Selected d. All types

Q.2 A structure that is present in animal cells but absent in plant cells is:
a. Cell wall b. Chloroplast
c. Chromosomes d. Centrosome

Q.3 It is also called as post office of the cell:
a. Nucleus b. Golgi complex
c. Mitochondria d. Endoplasmic reticulum

Q.4 Total number of microtubule triplets in a pair of centriole is:
a. 9 b. 18
c. 27 d. 54

Q.5 Site of Krebs cycle in a eukaryotic cell is:
a. Cytosol of cell b. Lumen of cristae
c. Outer compartment of mitochondria d. Inner compartment of mitochondria

Q.6 During which stage of cell cycle, nucleus will be visible?
a. Interphase b. Anaphase
c. Late prophase d. Early telophase

Q.7 At the beginning of cell division, each chromosome contains:
a. 1 chromatid and 1 centromere b. 2 chromatids and 1 centromere
c. 2 chromatids and 2 centromeres d. 4 chromatids and 2 centromeres

Q.8 It is the main source of carbohydrates for animals:
a. Starch b. Glycogen
c. Cellulose d. Chitin

Q.9 It is true about alpha carbon of amino acid:
a. It is central carbon b. It is involved in peptide bond formation
c. It is carbon of R-group d. It is carbon of COOH group

Q.10 The helical structure of a polypeptide is kept by the formation of:
a. Peptide bonds b. Hydrogen bonds
c. Ionic bonds d. Hydrophobic interactions

Q.11 Oleic acid is an example of:
a. Essential amino acid b. Saturated fatty acid
c. Monounsaturated fatty acid d. Polyunsaturated fatty acid

Q.12 Compound formed by combination of a base, pentose sugar and phosphoric acid is called:
a. Phosphatidic acid b. Phospholipid
c. Nucleoside d. Nucleotide

Q.13 All of the following are true about coenzymes except:
a. Non-protein in nature b. Covalently bonded to enzyme
c. Closely related to vitamins d. Used again and again

Q.14 At unlimited substrate concentration, increasing enzyme by two folds, rate of reaction will:
a. Remain same b. Slow down
c. Increase by two folds d. Increase by four folds

Q.15 An inhibitor is a chemical substance that reacts with enzyme in place of:
a. Co-factor b. Co-enzyme
c. Activator d. Substrate

Q.16 Thylakoid membranes play role in all of the following except:
a. Chemiosmosis b. Calvin cycle
c. Photophosphorylation d. Z-scheme

Q.17 Hydrocarbon tail of the chlorophyll is also called as:
a. Porphyrin b. Pyrrole
c. Haeme d. Phytol

Q.18 It is not the part of reaction centre of PS-I:
a. Chlorophyll 'a' b. Chlorophyll 'b'
c. Primary electron acceptor d. Electron transport chain

Q.19 NADP reductase causes reduction of:
a. Plastocyanin b. Ferredoxin
c. $NADP^+$ d. NADPH

Q.20 It is not an energy yielding process:
a. Preparatory phase of glycolysis b. Oxidative phase of glycolysis
c. Pyruvic acid oxidation d. Oxidative phosphorylation

Q.21 Which of the following is at lowest energy in respiratory chain?
a. Cytochrome 'a' b. Cytochrome 'a_3'
c. Cytochrome 'b' d. Cytochrome 'c'

Q.22 Tails of bacteriophages are usually:
a. Pyramidal shape b. Icosahedral shape
c. Spherical shape d. Rod shape

Q.23 In life cycle of HIV, reverse transcriptase converts:
a. SS-RNA into SS-DNA b. SS-RNA into DS-DNA
c. DS-RNA into SS-DNA d. DS-RNA into DS-DNA

Q.24 Viruses have special molecules on the outer covering that identifies particles on:
a. Host genome b. Host cell surface
c. Host cytoplasm d. Host nucleus

Q.25 On the basis of morphology, viruses can be classified into _____ types.
a. Two b. Three
c. Four d. Five

Q.26 Bacterium of cholera is:
a. Coccus b. Bacillus
c. Spirillum d. Vibrio

Q.27 Nucleoid of a bacterial cell contains:
a. Nuclear membrane b. Chromatin body
c. Histone protein d. Nucleohistones

Q.28 The organisms of which phylum seems to have a polyphyletic origin?
a. Kingdom Monera b. Kingdom protista
c. Kingdom fungi d. Kingdom animalia

Q.29 Which the following group of organism can also be called as recyclers?
a. Fungi b. Fungus like protists
c. Animal like protists d. Algae

Q.30 Lycopsids are also called as club mosses because of club shape of:
a. Strobili b. Branches
c. Leaves d. Sporangia

Q.31 Most of the forest belongs to:
a. Angiosperms b. Filicineae
c. Gymnosperms d. Psilopsida

Q.32 Mesoderm gives rise to all except:
a. Muscles b. Bones
c. Gonads d. Liver

Q.33 The cells of phloem that conduct or transport sugars and other organic material throughout plant are called:
a. Tracheids b. Companion cells
c. Sieve elements d. Phloem parenchyma cells

Q.34 Food in plants is transported in the form of:
a. Monosaccharide b. Disaccharide
c. Polysaccharide d. Oligosaccharide

Q.35 Chordae tendinae are extension of:
a. Heart b. Auricles
c. Ventricles d. Sinus venosus

Q.36 95% of the cytoplasm of RBCs is:
a. Carbonic anhydrase b. Salts
c. Myoglobin d. Hemoglobin

Q.37 Liver receives deoxygenated blood with absorbed food from alimentary canal through:
a. Mesenteric artery b. Hepatic artery
c. Hepatic vein d. Hepatic portal vein

Q.38 Highest blood pressure is found in:
a. Aorta b. Pulmonary trunk
c. Superior vena cava d. Inferior vena cava

Q.39 All are functions of lymphatic system except:
a. Transport fat b. Blood filtration
c. Provide immunity d. Filtration of urea

Q.40 Return of lymph from lower leg is assisted by:
a. Lymph nodes b. Calf muscles
c. Venous valves d. Cytokines

Q.41 These represent antigen binding sites on antibody molecule:
a. Variable segment b. Constant segment
c. Hinge region d. Receptor region

Q.42 Active artificial immunization is provided by:
a. Antiserum b. Interferon
c. Vaccine d. Antibiotic

Q.43 Shivering thermogenesis is which type of adaptations?
a. Structural b. Behavioral
c. Physiological d. Histological

Q.44 Which part of juxtamedullary nephron is found in inner medulla?
a. Bowman's capsule b. 1st convoluted part
c. Loop of Henle d. 2nd convoluted part

Q.45 This process of urine formation is highly selective:
a. Filtration b. Ultrafiltration
c. Reabsorption d. Secretion

Q.46 ADH and aldosterone are involved in reabsorption of substances respectively by acting on:
a. PCT and DCT b. Ascending limb and descending limb
c. Collecting duct and loop of Henle d. Bowman's capsule and glomerulus

Q.47 The environment where the animals produce large volumes of diluted urine is:
a. Hypotonic aquatic b. Hypertonic aquatic
c. Isotonic aquatic d. Terrestrial

Q.48 Sarcolemma is primarily made up of:
a. Lipoprotein b. Glycoprotein
c. Glycolipids d. Nucleoproteins

Q.49 I-band in skeletal muscle contains:
a. Thick filaments only b. Thin filaments only
c. Mainly thick and partly thin d. Mainly thin and partly thick

Q.50 During muscle contraction, H-zone disappears due to increase in:
a. Muscle length b. Length of myosin
c. Overlapping of actin and myosin d. Lengthening of sarcomere

Q.51 Collection of cell bodies of neurons in PNS is called:
a. Nerve b. Ganglion
c. Gray matter d. White matter

Q.52 These cells secrete testosterone under influence of LH:
a. Follicle cells b. Germinal cells
c. Interstitial cells d. Sertoli cells

Q.53 Hypothalamus produces all of the following hormones except:
a. ADH b. SRF
c. Oxytocin d. Prolactin

Q.54 Total number of parathyroid glands in human body is:
a. 1 b. 2
c. 3 d. 4

Q.55 All of the following actions are related with adrenaline except:
a. Vasodilation at skeletal muscle b. Vasoconstriction at gut
c. Increase in cardiac output d. Release of glucose from liver

Q.56 All of the following start at puberty except:
a. Spermatogenesis b. Oogenesis
c. Ovulation d. Menstrual cycle

Q.57 A hormone that causes thickening of uterus in secretory phase is:
a. FSH b. LH
c. Estrogen d. Progesterone

Q.58 It is an STD caused by RNA virus:
a. Gonorrhea b. Syphilis
c. Genital herpes d. AIDS

Q.59 _____ is the chance of an event to occur.
a. Probability b. Pleiotropy
c. Dominance d. Epistasis

Q.60 All of the following traits of pea plant are dominant except:
a. Purple flowers b. Terminal flowers
c. Green pod d. Yellow seed

Q.61 Dominance is physiological effect of an allele over its partner allele occupying:
a. Same locus on same chromosome b. Same locus on respective homologue
c. Different locus on same chromosome d. Different locus on respective homologue

Q.62 A test cross between plants of 'Tt' and 'tt' genotypes will produce:
a. All tall plants b. 50% tall, 50% dwarf
c. All dwarf plants d. 75% tall, 25% dwarf

Q.63 If in a dihybrid cross, Mendel had used two such characters which have linked, he would have faced difficulty in explaining the results on the basis of his:
a. Law of segregation b. Law of multiple factor hypothesis
c. Law of independent assortment d. Law of dominance

Q.64 _____ form one linkage group on human chromosome 11.
a. Colour blindness, gout and albinism b. Sickle cell anaemia, leukemia and albinism
c. Colour blindness, hemophilia and gout d. Sickle cell anemia, albinism and hemophilia

Q.65 The gene of which of the following protein are present on autosome?
a. Red opsin b. Clotting factor XI
c. Clotting factor IX d. Clotting factor VIII

Q.66 In Avery's experiment, the transforming ability was lost when they added:
a. Proteases b. DNAase
c. RNAase d. Methyl transferase

Q.67 Which of the following feature is not associated with DNA polymerase III?
a. It can add nucleotides only to 3' end of parent strand
b. It can initiate synthesis of new strand on its own
c. It needs primer to add nucleotides
d. It proceeds replication from 5' to 3' on a growing strand

Q.68 Which of the following statement is correct regarding tRNA?
a. Its 3' end binds with –COOH group of amino acid
b. Its 3' end binds with $–NH_2$ group of amino acid
c. Its 5' end binds with –COOH group of amino acid
d. Its 5' end binds with $–NH_2$ group of amino acid

Q.69 In the process of transcription, the strand of DNA with polarity _____ acts as a _____ strand.

a. $5' \rightarrow 5'$, Coding strand
b. $3' \rightarrow 5'$, Template Strand
c. $3' \rightarrow 3'$, Coding strand
d. $5' \rightarrow 3'$, Template strand

Q.70 How many codons can specify arginine?

a. 2
b. 3
c. 4
d. 6

Q.71 Transcription is initiated when RNA polymerase binds at:

a. Primer
b. Promoter
c. Start codon
d. Initiation complex

Q.72 Darwin believed in:

a. Inheritance of acquired characters
b. Special creation by nature
c. Perceived unity in life
d. Evolution due to catastrophe

Q.73 Fossil record shows that earliest vertebrates were:

a. Bacteria
b. Fishes
c. Amphibians
d. Echinoderms

Q.74 Organs which have functional similarity but are structurally different:

a. Analogous organs
b. Homologous organs
c. Vestigial organs
d. Degenerated organs

Q.75 Restriction enzyme EcoR1 cuts the DNA to produce:

a. Palindromic sequence
b. Flanking site
c. Sticky ends
d. Blunt ends

Q.76 PCR uses DNA polymerase that is commonly extracted from:

a. Viruses
b. Bacteria
c. Fungi
d. Humans

Q.77 Maxam Gilbert method is used to find:

a. Sequence of genes on chromosome
b. Karyotype of an individual
c. Sequence of nucleotides in a gene
d. Genotype & phenotype of an individual

Q.78 Plants having foreign DNA incorporated into their cells are called:

a. Clone plants
b. Transgenic plants
c. Parthenocarpic plants
d. Mutant giants

Q.79 DNA segments of different lengths can be separated by a process of:

a. Western blotting
b. Northern blotting
c. Autoradiography
d. Gel electrophoresis

Q.80 In which process, multiple copies of the desired gene are produced?

a. Polymerase chain reaction
b. Gene sequencing
c. Analyzing DNA
d. DNA finger printing

NMDCAT

SUPER FINAL PAPER–3

Total MCQs: 200 **Max. Marks: 200**

CHEMISTRY

Q.81 The e/ m value of positive rays is maximum for
a. Helium
b. Nitrogen
c. Oxygen
d. Hydrogen

Q.82 The limiting line of Balmer series lies in
a. Visible region
b. I.R region
c. U.V region
d. X-rays region

Q.83 When 25 g lime stone ($CaCO_3$) is heated then 7g CaO is formed. What is %age yield of given reaction $CaCO_3 \longrightarrow CaO + CO_2$
a. 40 %
b. 50 %
c. 75 %
d. 100 %

Q.84 With increase in the value of principal quantum number 'n' the shape of the p – orbitals remain same although their sizes
a. Decrease
b. Remain the same
c. Increase
d. May or may not remain the same

Q.85 Total number of oxygen atoms present in 32 g sulphur dioxide (S = 32, O = 16)
a. 6.02×10^{22}
b. 6.02×10^{23}
c. 3.1×10^{22}
d. 3.1×10^{23}

Q.86 The weight of a single atom of oxygen is
a. 5.057×10^{23} g
b. 1.556×10^{23} g
c. 2.656×10^{-23} g
d. 4.538×10^{-23} g

Q.87 The formula used to find out the number of electrons in a sub-shell is
a. n^2
b. $2(2l + 1)$
c. $2n^2$
d. $2l + 1$

Q.88 Mathematically, Boyle's law can be represented as
a. $V \propto \frac{1}{P}$
b. $P_1V_1 = P_2V_2$
c. $PV = K$
d. All of these

Q.89 The root mean square velocity (Cr.m.s) of gas molecules is given by the relation
a. $C_{rms} = \sqrt{\frac{RT}{M}}$
b. $C_{rms} = \sqrt{\frac{2RT}{M}}$
c. $C_{rms} = \sqrt{\frac{3RT}{M}}$
d. $C_{rms} = \sqrt{\frac{8RT}{M}}$

Q.90 The momentary attraction between the molecules of a liquid caused by instantaneous dipole and induced –dipole attractions are called
a. Dipole-dipole forces
b. London dispersion forces
c. Polar forces
d. Debye forces

Q.91 The strongest H-bonding is present among the molecules of which of the following substance
a. Ammonia
b. Water
c. Hydrogen fluoride
d. Ethanol

Q.92 Which one of the following is an example of polar molecular solid
a. Naphthalene
b. Iodine
c. Dry ice
d. Sucrose

Q.93 In the structure of NaCl, each sodium ion is surrounded by chloride ions
a. 4
c. 6
b. 5
d. 8

Q.94 **The relationship between Kp and Kc for the following reaction is**

$H_{2(g)} + 1/2\ O_{2(g)} \rightleftharpoons H_2O_{(g)}$

a. $Kp = Kc\ (RT)^{1/2}$ b. $Kc = Kp\ (RT)^{1/2}$

c. $Kc = Kp\ (RT)^{-1/2}$ d. $Kp = Kc\ RT$

Q.95 **Maximum yield of ammonia can be obtained during Haber's process by**

a. Continuous withdrawal of reaction mixture b. Increasing temperature

c. Increasing pressure d. All of above

Q.96 **During the manufacture of nitric acid, nitric oxide is oxidized to nitrogen dioxide. This reaction is given as**

$$2NO_{(g)} + O_{2(g)} \rightleftharpoons 2NO_{2(g)} \quad \Delta H = -114 kJ/mol$$

According to Le Chatelier's Principle

a. Reaction must not be temperature dependent

b. Reaction must be carried out at room temperature

c. Reaction must be carried out at low temperature

d. Reaction must be carried out at high temperature

Q.97 **What is the correct relation between pH and pKa?**

a. $pH = pKa + \log\left[\frac{Acid}{Salt}\right]$ b. $pH = pKb + \log\left[\frac{Salt}{Acid}\right]$

c. $pH = pKa - \log\left[\frac{Acid}{Salt}\right]$ d. $pKa = pH + \log\left[\frac{Salt}{Acid}\right]$

Q.98 **Rate of first order reaction depends on _____:**

a. Concentration of one reactant

b. Concentration of two reactants

c. Concentration of three reactants

d. Independence of the initial concentration

Q.99 **A radioactive sample disintegrates 87.5% after 9 years. What will be the half-life of the sample**

a. 5 Years b. 2 Years

c. 3 Years d. 10 Years

Q.100 **If the reactants or product of a chemical reaction can absorb ultraviolet, visible or infra-red radiation then the rate of a chemical reaction can best be measured by which one of the following methods?**

a. Chemical method b. Graphical method

c. Spectrometry d. Differential method

Q.101 **When the change in concentration is 6×10^{-4} moldm^{-3} and time for that change is 10 seconds, the rate of reaction will be**

a. 6×10^{-3} moldm^{-3} sec^{-1} b. 6×10^{-2} moldm^{-3}sec^{-1}

c. 6×10^{-4} moldm^{-3} sec^{-1} d. 6×10^{-5} moldm^{-3}sec^{-1}

Q.102 **Which of the following is correct representation of enthalpy of formation**

a. $Mg_{(s)} + \frac{1}{2}O_{2(g)} \rightarrow MgO_{(s)}$ $\Delta H^o_f = -692\ kJmol^{-1}$

b. $Mg_{(s)} + O_{2(g)} \rightarrow MgO_{(s)}$ $\Delta H^o_f = -692\ kJmol^{-1}$

c. $2Mg_{(s)} + O_{2(g)} \rightarrow 2MgO_{(s)}$ $\Delta H^o_f = -692\ kJmol^{-1}$

d. All of these

Q.103 **A spontaneous process is:**

a. Unidirectional and irreversible b. Unidirectional and real

c. Irreversible and real d. All of above

Q.104 **Combustion of graphite to form CO_2, can be done by two ways. Reactions are given as follow**

$C + O_2 \longrightarrow CO_2$ $\Delta H = -393.7\ kJmol^{-1}$

$C + \frac{1}{2}O_2 \longrightarrow CO$ $\Delta H_1 = ?$

$CO + \frac{1}{2}O_2 \longrightarrow CO_2$ $\Delta H_2 = -283\ kJmol^{-1}$

a. $-676\ kJ\ mol^{-1}$ b. $+110\ kJ\ mol^{-1}$

c. $-110\ kJ\ mol^{-1}$ d. $676\ kJ\ mol^{-1}$

Q.105 Study the following redox reaction:

$$10Cl^- + 16H^+ + 2MnO_4^- \rightarrow 5Cl_2 + 2Mn^{+2} + 8H_2O$$

Which statement is true about this reaction?

a. Manganese is oxidized from +7 to +2. b. Chlorine is reduced from zero to -1

c. Chloride ions are reduced from -1 to zero d. Manganese is reduced from +7 to +2

Q.106 The E° value of standard zinc half-cell is -0.76V, measured when it is connected with SHE i.e. Standard hydrogen electrode. In this case the half reaction taking place at SHE is

(a) $2H^+_{(aq)} + 2e^- \longrightarrow H_{2(g)}$ b. $H_{2(g)} \longrightarrow 2H^+_{(aq)} + 2e^-$

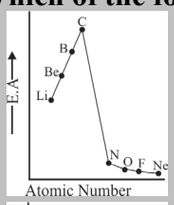
(c) $2H^+_{(aq)} + 2e^- \longrightarrow 2H_{(g)}$ d. $H_{2(g)} \longrightarrow 2H_{(g)} + 2e^-$

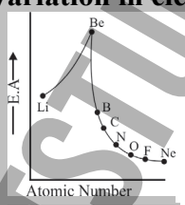
Q.107 Which one of the following behave as a redox reaction?

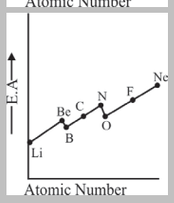
a. $NaCl + AgNO_3 \rightarrow NaNO_3 + AgCl$ b. $2Na + Cl_2 \rightarrow 2NaCl$

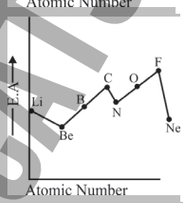
c. $2Br^- \rightarrow Br_2 + 2e^-$ d. $K^+ + 1e^- \rightarrow K$

Q.108 Which of the following is correct graph for variation in electron affinity values

a. 

b. 

c. 

d. 

Q.109 Which one is correct order about 1st I.E.

a. Al > Mg > Na b. Mg > Al > Na

c. Na > Mg > Al d. Al > Na > Mg

Q.110 VSEPR theory explains shapes and geometries of molecule. The superiority of VBT on VSEPR is

a. VBT explains shapes of molecules more accurately

b. VBT also explains the reason for bond formation

c. VBT explains paramagnetic behaviour of certain molecules

d. VBT explains the coordinate covalent bond formation

Q.111 Which of the following does not react with water even when red hot at high temperature

a. Mg b. Be

c. Ca d. Na

Q.112 Across the short period the melting and boiling point increase upto

a. IIIA group b. IVA group

c. VA group d. VIA group

Q.113 Which of the following is the most reactive alkali metal

a. Lithium c. Sodium

b. Potassium d. Cesium

Q.114 The outer electronic configuration of an atom is $3d^5$, $4s^1$, the atom is

a. Manganese b. Chromium

c. Iron d. Vanadium

Q.115 Paramagnetic behavior of atoms, ions or molecules is due to:

a. Paired electrons b. Protons

c. Unpaired electrons d. Neutrons

Q.116 Oxidation state of 'Fe' in $K_3[Fe(CN)_6]$ is:

a. +2 b. -6

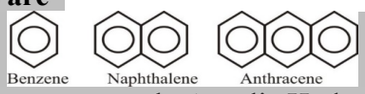
c. -3 d. +3

Q.117 Which one of the following pairs can be cis-trans isomer to each other?

a. CH_3-CH=CH-CH_3 and H_3C-CH=CH-CH_3 b. CHCI=CCl_2 and CH_2=CH_2

c. CHCI=CH_2 and CH_2=CHCl d. CH_3-CH_3 and CH_2=CH_2

Q.118 The given three hydrocarbons are



a. Alicyclic hydrocarbons
b. Acyclic Hydrocarbons
c. Aromatic hydrocarbons
d. Heterocyclic hydrocarbons

Q.119 The type of structural isomerism which arises due to the difference in the nature of carbon chain or carbon skeleton is

a. Chain isomerism
b. Cis-Trans isomerism
c. Position isomerism
d. Optical isomerism

Q.120 For hydration of ethene the intermediate compound is

a. Methyl hydrogen sulphate
b. Ethyl hydrogen sulphate
c. Ethylene hydrogen sulphate
d. Vinyl hydrogen sulphate

Q.121 1% alkaline $KMnO_4$ solution is a

a. Strong oxidizing agent
b. Mild oxidizing agent
c. Locating agent
d. Reducing agent

Q.122 Acetone is prepared by the hydration of propyne through formation of

a. Propanol
b. Propyne
c. Propen-2-ol
d. Propane

Q.123 In nitration of benzene NO_2^+ is an electrophile. It is produced by

a. Conc. HNO_3 + Conc. H_2SO_4
b. Dil. HNO_3 + Dil. H_2SO_4
c. Conc. HNO_3 + Dil. H_2SO_4
d. Dil. HNO_3 + Conc. H_2SO_4

Q.124 Which of the following is produced by the action of CH_3Cl on benzene in presence of $AlCl_3$ followed by oxidation in the presence of acidified $KMnO_4$ give

a. Toluene
b. ortho-Xylene
c. meta-Xylene
d. Benzoic acid

Q.125 Which of the following alkyne shows acidic character

a. 2-Butyne
b. Ethyne
c. 1-Butyne
d. Both b and c

Q.126 Iso-butyl chloride has following carbon attached to chloro group

a. Tertiary
b. Secondary
c. Quaternary
d. Primary

Q.127 Isopropyl chloride undergoes reaction by

a. S_N1 or S_N2 mechanism
b. Neither S_N1 nor S_N2 mechanism
c. S_N1 mechanism only
d. S_N2 mechanism only

Q.128 Consider the reaction given below:

$$CH_3 - CH_2Br \xrightarrow[alcohol]{KOH} H_2C = CH_2 + HBr$$

Mechanism followed by the reaction is:

a. E2
b. S_N1
c. E1
d. S_N2

Q.129 The order of reactivity of alcohols when C – O bond breaks

a. Primary > secondary > tertiary
b. Secondary > tertiary > primary
c. Tertiary > Primary > secondary
d. Tertiary > secondary > primary

Q.130 Picric acid is

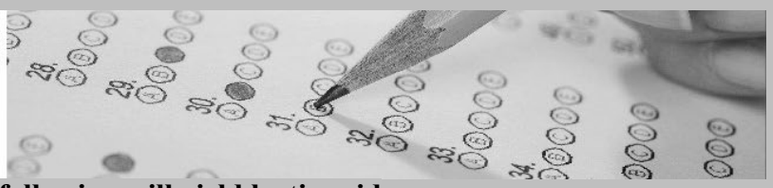
a. Monocarboxylic acid
b. Dicarboxylic acid
c. Aromatic carboxylic acid
d. Phenol derivative

Q.131 In CH_3CH_2OH, the bond that undergoes heterolytic cleavage most readily is

a. O – H
b. C – H
c. C – O
d. C – C

Q.132 Glucose and acetaldehyde give silver mirror test with Tollen's reagent. It shows presence of

a. Ketonic group
b. Aldehydic group
c. Alcoholic group
d. Acidic group



Q.133 Cyanohydrin of which of the following will yield lactic acid

a. HCHO
b. CH_3COCH_3
c. CH_3CH_2CHO
d. CH_3CHO

Q.134 Sodium borohydride reduces _____ to alcohols

a. Propene
b. Propanoic acid
c. Propanal
d. Propane

Q.135 Oxidation of alkenes in presence of hot $KMnO_4$ solution, the products obtained can be

a. Ketones
b. Carboxylic acids
c. Carbon dioxide
d. Glycol

Q.136 $CH_3COOH + NH_3 \xrightarrow{Heat} ?$ **the final product (s) formed**

a. $CH_3CONH_2 + CO_2$
b. $CH_3CONH_2 + H_2O$
c. $CH_3CONH_2 + H_2$
d. $CH_3CONH_2 + HCl$

Q.137 $CH_3CONH_2 \longrightarrow CH_3CH_2NH_2 + H_2O$ **which of following reagent is used for given conversion**

a. $NaBH_4$ / Ether
b. H_2 / Ni
c. $LiAlH_4$ / Ether
d. $KMnO_4$ / H_2SO_4

Q.138 Collagen proteins are present in _____ throughout the body.

a. Muscle
b. Tendons
c. Red blood cell
d. Blood plasma

Q.139 Many enzymes contain a protein part and non-protein part. The non-protein part is known as

a. Co-enzyme
b. Co-factor
c. Apoenzyme
d. Both a and b

Q.140 Enzymes are of great biological importance and are of great help in the diagnosis of certain diseases. Which of the following enzyme is raised in heart diseases.

a. Lactic dehydrogenase
b. Phosphatase
c. LDH-1
d. Alkaline phosphates

NMDCAT

SUPER FINAL PAPER–3

Total MCQs: 200 **Max. Marks: 200**

PHYSICS

Q.141 If velocity of a body changes by equal amount in equal intervals of time, the body is said to have:
a. Uniform velocity
b. Uniform acceleration
c. Variable acceleration
d. Gravitational acceleration

Q.142 A cricket ball of mass 0.5 kg strikes a bat normally with a velocity of 30 ms^{-1} and rebounds with a velocity of 20 ms^{-1} in the opposite direction. The impulse of the force exerted by the ball on the bat is
a. 0.5 Ns
b. 1.0 Ns
c. 25 Ns
d. 50 Ns

Q.143 At maximum height on the trajectory which of projectile becomes zero
a. Acceleration
b. Vertical velocity
c. Velocity
d. Horizontal velocity

Q.144 If an object is moving with constant velocity of 20ms^{-1} towards north then its acceleration will be
a. 5 ms^{-2}
b. 10ms^{-2}
c. 9ms^{-2}
d. 0ms^{-2}

Q.145 The momentum of a moving body is increased by 30%, then %age increase in K.E is
a. 30%
b. 69%
c. 49%
d. 89%

Q.146 An automobile is moving forwards with uniform velocity due to the force 1000 N exerted by its engine, then force of friction on the moving automobile will be?
a. 0 N
b. 500 N
c. 1000 N
d. 2000 N

Q.147 In a certain situation, $\vec{F}$ and $\vec{S}$ are not equal to zero but the work done is zero. If $\vec{F}$ have only x-component then what we conclude about displacement
a. $\vec{S}$ have only x-component
b. $\vec{S}$ have non-zero x and y-components
c. $\vec{S}$ have non-zero y and z-components
d. $\vec{S}$ have non-zero x and z-components

Q.148 3 kg stone falls from 20m high platform. Find its falling speed at 10m height.
a. 196 ms^{-1}
b. 14 ms^{-1}
c. 10 ms^{-1}
d. 100 ms^{-1}

Q.149 Angular speed of minute hand of mechanical watch is:
a. $\pi / 30 \text{ rad min}^{-1}$
b. $\pi / 2 \text{ rad min}^{-1}$
c. $\pi \text{ rad min}$
d. None of these

Q.150 The angular displacement is
a. Always vector quantity
b. Vector quantity for small value of θ
c. Vector quantity for large value of θ
d. Never a vector quantity

Q.151 The shaft of a motor rotates at a constant angular speed of 360rev/min. Angle turned through in 1 sec in radian is
a. π
b. 6π
c. 3π
d. 12π

Q.152 If a rotating body is moving counter clockwise with decreasing angular velocity, then direction of angular acceleration will be
a. In the direction of angular velocity
b. In the direction opposite to angular velocity
c. Along the axis of rotation
d. Both 'b' and 'c'

Q.153 A string of length 2 m fixed between two supports vibrates in 1st overtime. The distance between node and antinode is:

a. 50 cm
b. 100cm
c. 200cm
d. 10cm

Q.154 An observer moves towards a stationary source of sound, with a velocity one fifth of the velocity of sound. What is the percentage increase in the apparent frequency?

a. Zero
b. 5%
c. 0.5%
d. 20%

Q.155 Trough of a wave acts as:

a. Concave lens
b. Convex lens
c. Convex mirrors
d. Plane mirror

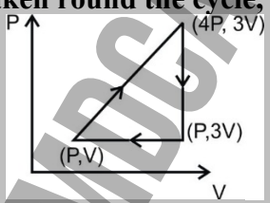
Q.156 When source is moving towards observer with velocity u_s then the modified frequency 'f_c' will be

a. $f_c = f\left[\frac{v - u_s}{v}\right]$
b. $f_c = f\left[\frac{v}{v + u_s}\right]$
c. $f_c = f\left[\frac{v}{v - u_s}\right]$
d. $f_c = f\left[\frac{v + u_s}{v}\right]$

Q.157 If one mole of an ideal gas is heated at constant pressure, then the first law of thermodynamics can be written as:

a. $C_p\Delta T = C_v\Delta T + P\Delta V$
b. $C_p\Delta T = C_v\Delta T + V\Delta P$
c. $C_v\Delta T = Cp\Delta T + P\Delta T$
d. $\Delta C_v T = \Delta C_v T + P\Delta V$

Q.158 An ideal monatomic gas has taken round the cycle, work done during the cycle is:



a. Zero
b. 3 PV
c. 6PV
d. 9PV

Q.159 The distance between the plates of a parallel plate capacitor is 2.0 mm and area of each plates is 2.0 m^2. A potential difference of 1.0×10^{-4} V is applied across the plates. Find the capacitance.

a. 4×10^4F
b. 8.85×10^{-9}F
c. 3.54×10^9F
d. 9.0×10^{-4}F

Q.160 One Kg m $sec^{-2}C^{-1}$ is equal to

a. J-sec
b. Wb m^2
c. Vm^{-1}
d. Fm^{-1}

Q.161 Force experienced per unit positive test charge at a point in an electric field is the definition of:

a. Electric potential energy
b. Electric potential
c. Electric field strength
d. Electric field

Q.162 When a charge "Q" on a capacitor is doubled then energy stored "U" will:

a. 2 U
b. 3U
c. U/2
d. 4U

Q.163 Temperature of conductor increases. The product of resistivity and conductivity

a. Increases
b. Remains same
c. Decreases
d. First increases then decreases

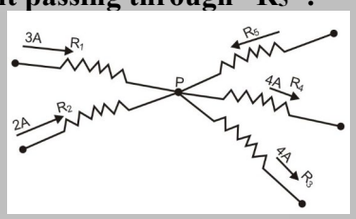
Q.164 If length of the wire becomes two time to the original value and area becomes one half to its original value, then resistance of the wire becomes:

a. Double
b. Four times
c. One half
d. One fourth

Q.165 It is a unit type resistance device for measuring potential differences:

a. Galvanometer
b. Ohmmeter
c. Ammeter
d. Potentiometer

Q.166 Consider the circuit diagram in which a mesh is shown carrying currents in each resistor. What is the current passing through "R_5"?



a. 10A
b. 3A
c. 6A
d. 2A

Q.167 A charged particle enters in combined electric and magnetic field. $\vec{E} \perp \vec{B}$ of strength 5 N/C and 2.0 T. If $F_m = F_e$ then speed of charged particle will be

a. 5 ms^{-1}
b. 10ms^{-1}
c. 2.5 ms^{-1}
d. 15 ms^{-1}

Q.168 Smallest unit of magnetic flux density is

a. Wbm^{-2}
b. Tesla
c. $NA^{-1}\ m^{-1}$
d. Gauss

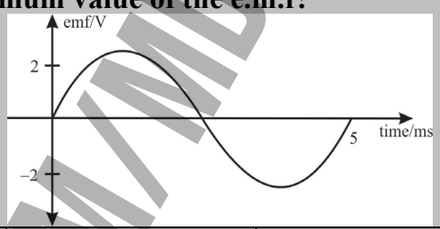
Q.169 Which of following law explain the dependence of emf established in a coil and the change in magnetic flux?

a. Lenz's law
b. Faraday's law
c. Ampere's law
d. Both Faraday's and Ampere's law

Q.170 Primary and secondary coils of a transformer have 50 and 200 turns respectively. When primary is connected to 9-volt battery secondary voltage is

a. 90
b. 18
c. 36
d. Zero

Q.171 The diagram shows how the e.m.f. of a simple generator varies with time. What is the frequency and the maximum value of the e.m.f?



	Frequency / Hz	Maximum e.m.f. / V
a.	200	2.0
b.	400	2.0
c.	200	4.0
d.	400	4.0

Q.172 Which of the remain constant in a transformer?

a. Current
b. Potential
c. Power
d. Frequency

Q.173 During the interval $0 \rightarrow \frac{T}{2}$ the forward biased diode offers

a. Very small resistance
b. Very high resistance
c. Very small current flow through it
d. Zero resistance

Q.174 In a bridge rectifier how many diode conducts during each half cycle of input A.C

a. 2
b. 1
c. 3
d. All

Q.175 Calculate the energy of a photon of frequency 3.0 $\times 10^{18}$ Hz. (h = 6.63 $\times$ 10^{-34}Js)

a. 19.89 $\times$ 10^{-18} J
b. 11.89 $\times$ 10^{-16} J
c. 1.89 $\times$ 10^{-16} J
d. 19.89 $\times$ 10^{-16} J

Q.176 What is the de Broglie wavelength of a proton whose linear momentum has a magnitude of 3.3 $\times$ 10^{-23} kgm/s?

a. 0.0002 nm
b. 0.002 nm
c. 0.02 nm
d. 0.2 nm

Q.177 When electron jumps from n^{th} to the p^{th} orbit in an hydrogen atom then the wavelength of the emitted radiation is given by

a. $\frac{1}{\lambda} = R_H\left[\frac{n^2 - p^2}{p^2 n^2}\right]$

b. $\frac{1}{\lambda} = R_H\left[\frac{1}{n^2} - \frac{1}{p^2}\right]$

c. $\frac{1}{\lambda} = \frac{1}{R_H}\left[\frac{1}{p^2} - \frac{1}{n^2}\right]$

d. $\frac{1}{\lambda} = \frac{1}{R_H}\left[\frac{1}{4^2} - \frac{1}{n^2}\right]$

Q.178 A radioactive nuclide decays by emitting an α-particle and a γ-ray photon, the change in the nucleon number will be:

a. –4

b. –2

c. –2

d. –3

Q.179 During the decay of radioactive isotopes $^{232}_{90}X$ to a stable isotope, six α-particles and four β-particles are emitted, what is the atomic number 'Z' and mass number 'A' of the stable isotopes:

a. Z = 70, A = 220

b. Z = 82, A = 212

c. Z = 78, A = 212

d. Z = 82, A = 208

Q.180 In which of the following decays atomic number increases

a. α

b. β^+

c. β^-

d. λ

NMDCAT

SUPER FINAL PAPER–3

Total MCQs: 200 **Max. Marks: 200**

ENGLISH

SPOT THE ERROR:

In the first type of sentences, some segments of each sentence are underlined. Your task is to identify that underlined segment of the sentence, which contains the mistake that needs to be corrected.

Q.181 The main effort should focus <u>to find</u> a solution <u>to</u> the conflict rather than <u>persisting</u> <u>with</u>
a. b. c. d.
the current situation.

Q.182 She <u>peered around</u> corners and <u>snooped in</u> vacant desks searching for anything that <u>might</u>
a. b. c.
<u>be</u> deemed <u>to incriminate</u>.
d.

Q.183 I <u>did remember</u> the rummage sale to which I sent all my old clothes, <u>including</u> a coat that
a. b.
had got mixed up with <u>them by</u> accident, and that I believe I <u>could wear</u> again.
C. d.

Q.184 <u>What has God</u> not <u>blessed me</u>? Health, peace of mind, freedom <u>from</u> care; I have
a. b. c.
everything <u>one</u> can desire.
d.

Q.185 She had looked at the combs without <u>the least</u> hope <u>of owning</u> them. And now they were
a. b.
<u>her</u>, but her <u>hair was</u> gone.
c. d.

Q.186 In 1918, <u>the</u> American Society of Letters honoured his name by <u>finding</u> the O. Henry
a. b.
Memorial Award, <u>which gives</u> an annual rize for <u>the best American</u> short story.
c. d.

Q.187 His father <u>as</u> a young man had been one of <u>Napoleon conscripts</u> and <u>had won</u> the Cross
a. b. c.
of the Legion of Honor on the field of battle, <u>for</u> valor and fidelity.
d.

Q.188 <u>With</u> that chain <u>on</u> his watch, Jim could look at his watch and <u>know</u> the time anywhere
a. b. c.
he <u>might be</u>.
d.

CORRECTION:

In each of the following questions, four alternative sentences are given. Choose the **CORRECT** one and fill the Circle corresponding to that letter in the MCQ Response Form.

Q.189

a. MY teacher's zest for math makes class fun and excited for everyone.
b. My teacher's zest of math makes class funny and exciting for everyone.
c. My teacher's zest for math makes class funny and exciting for everyone.
d. My teacher's zest for math makes class fun and exciting for everyone.

Q.190

a. The car yielded when the lanes merged and allowed the other cars pass ahead.
b. The car yielded when the lanes merged and allowed the other cars to pass ahead.
c. The car yielded when the lanes merged and allowed the other cars passed ahead.
d. The car yielded when the lanes merged and allowed the other cars passing ahead.

Q.191

a. Evil and harsh, the wicked stepmother whips Cinderella with a belt until she will bleed.
b. Evil and harsh, the wicked stepmother whipped Cinderella with a belt until she had bled.
c. Evil and harsh, the wicked stepmother would whip Cinderella with a belt until she bled.
d. Evil and harsh, the wicked stepmother had whipped Cinderella with a belt until she bleeded.

Q.192

a. The elegant cultivating beard was long the prerogative of royalty and the privileged classes.
b. The elegant cultivated beard was long the prerogative of royalty and the privileged classes.
c. The elegantly cultivating beard was long the prerogative of royalty and the privileged classes.
d. The elegantly cultivated beard was long the prerogative of royalty and the privileged classes.

Q.193 That was a fine shock you gave us. The sentence is an example of:

a. Intransitive
b. Mono transitive
c. Complex transitive
d. Di transitive

Q.194

a. When he awoke, for he seemed asleep, he found himself in bed.
b. When he awakened, for he seemed to be asleep, he found himself in bed.
c. When he woke up, for he seemed to be asleep, he found himself in bed.
d. When he awoke, for he seemed to have been asleep, he found himself in bed.

Q.195

a. He was both more and less experienced than the youngest boy may well be.
b. He was both more and less experienced than the youngest boy may be well.
c. He was both more and less experienced than the youngest boy might well be.
d. He was both more and less experienced than the youngest boy might be well.

Q.196 "Don't waste time", the teacher said to the students. The indirect form of the speech?

a. The teacher forbade the students not to waste time.
b. The teacher advised the students not to waste time.
c. The teacher told the students to not waste time.
d. The teacher ordered the students do not waste time.

Sentence Completion

Fill in the blanks with appropriate word.

Q.197 Julie's purse was made by one of the best Italian designers, and _____it cost her three months' salary.

A. Since
B. Hence
c. Even though
d. Yet

Q.198 The singer's career might have been on the decline, but his online popularity _____grew by a huge percentage.

a. Ironically
b. Regrettably
c. Deplorably
d. Paradoxically

Synonyms

Choose the word that is most nearly **SIMILAR** in meaning to the word in capital letters.

Q.199 MENACES

a. Dotards
b. Hazards
c. Freaks
d. Boons

Antonyms

Choose the word **OPPOSITE** in meaning to CAPITALIZED word given above.

Q.200 STABLE

a. Brawny
b. Fishy
c. Slovenly
d. Rickety

KIPS ENTRY TESTS PREPARATION

NMDCAT

SUPER FINAL PAPER–3

Total MCQs: 200 **Max. Marks: 200**

BIOLOGY

Q.1 Plasma membrane allows _____ substances to pass through it.
a. Water soluble only
b. Lipid soluble only
c. Selected
d. All types

Q.2 A structure that is present in animal cells but absent in plant cells is:
a. Cell wall
b. Chloroplast
c. Chromosomes
D. Centrosome

Q.3 It is also called as post office of the cell:
a. Nucleus
b. Golgi complex
c. Mitochondria
d. Endoplasmic reticulum

Q.4 Total number of microtubule triplets in a pair of centriole is:
a. 9
b. 18
c. 27
d. 54

Q.5 Site of Krebs cycle in a eukaryotic cell is:
a. Cytosol of cell
b. Lumen of cristae
c. Outer compartment of mitochondria
d. Inner compartment of mitochondria

Q.6 During which stage of cell cycle, nucleus will be visible?
a. Interphase
b. Anaphase
c. Late prophase
d. Early telophase

Q.7 At the beginning of cell division, each chromosome contains:
a. 1 chromatid and 1 centromere
b. 2 chromatids and 1 centromere
c. 2 chromatids and 2 centromeres
d. 4 chromatids and 2 centromeres

Q.8 It is the main source of carbohydrates for animals:
a. Starch
b. Glycogen
c. Cellulose
d. Chitin

Q.9 It is true about alpha carbon of amino acid:
a. It is central carbon
b. It is involved in peptide bond formation
c. It is carbon of R-group
d. It is carbon of COOH group

Q.10 The helical structure of a polypeptide is kept by the formation of:
a. Peptide bonds
b. Hydrogen bonds
c. Ionic bonds
d. Hydrophobic interactions

Q.11 Oleic acid is an example of:
a. Essential amino acid
b. Saturated fatty acid
c. Monounsaturated fatty acid
d. Polyunsaturated fatty acid

Q.12 Compound formed by combination of a base, pentose sugar and phosphoric acid is called:
a. Phosphatidic acid
b. Phospholipid
c. Nucleoside
d. Nucleotide

Q.13 All of the following are true about coenzymes except:
a. Non-protein in nature
b. Covalently bonded to enzyme
c. Closely related to vitamins
d. Used again and again

Q.14 At unlimited substrate concentration, increasing enzyme by two folds, rate of reaction will:
a. Remain same
b. Slow down
c. Increase by two folds
d. Increase by four folds

Q.15 An inhibitor is a chemical substance that reacts with enzyme in place of:
a. Co-factor
b. Co-enzyme
c. Activator
d. Substrate

Q.16 Thylakoid membranes play role in all of the following except:
a. Chemiosmosis
b. Calvin cycle
c. Photophosphorylation
d. Z-scheme

Q.17 Hydrocarbon tail of the chlorophyll is also called as:
a. Porphyrin
b. Pyrrole
c. Haeme
d. Phytol

Q.18 It is not the part of reaction centre of PS-I:
a. Chlorophyll 'a'
b. Chlorophyll 'b'
c. Primary electron acceptor
d. Electron transport chain

Q.19 NADP reductase causes reduction of:
a. Plastocyanin
b. Ferredoxin
c. $NADP^+$
d. NADPH

Q.20 It is not an energy yielding process:
a. Preparatory phase of glycolysis
b. Oxidative phase of glycolysis
c. Pyruvic acid oxidation
d. Oxidative phosphorylation

Q.21 Which of the following is at lowest energy in respiratory chain?
a. Cytochrome 'a'
b. Cytochrome 'a_3'
c. Cytochrome 'b'
d. Cytochrome 'c'

Q.22 Tails of bacteriophages are usually:
a. Pyramidal shape
b. Icosahedral shape
c. Spherical shape
d. Rod shape

Q.23 In life cycle of HIV, reverse transcriptase converts:
a. SS-RNA into SS-DNA
b. SS-RNA into DS-DNA
c. DS-RNA into SS-DNA
d. DS-RNA into DS-DNA

Q.24 Viruses have special molecules on the outer covering that identifies particles on:
a. Host genome
b. Host cell surface
c. Host cytoplasm
d. Host nucleus

Q.25 On the basis of morphology, viruses can be classified into _____ types.
a. Two
b. Three
c. Four
d. Five

Q.26 Bacterium of cholera is:
a. Coccus
b. Bacillus
c. Spirillum
d. Vibrio

Q.27 Nucleoid of a bacterial cell contains:
a. Nuclear membrane
b. Chromatin body
c. Histone protein
d. Nucleohistones

Q.28 The organisms of which phylum seems to have a polyphyletic origin?
a. Kingdom Monera
b. Kingdom protista
c. Kingdom fungi
d. Kingdom animalia

Q.29 Which the following group of organism can also be called as recyclers?
a. Fungi
b. Fungus like protists
c. Animal like protists
d. Algae

Q.30 Lycopsids are also called as club mosses because of club shape of:
a. Strobili
b. Branches
c. Leaves
d. Sporangia

Q.31 Most of the forest belongs to:
a. Angiosperms
b. Filicineae
c. Gymnosperms
d. Psilopsida

Q.32 Mesoderm gives rise to all except:
a. Muscles
b. Bones
c. Gonads
d. Liver

Q.33 The cells of phloem that conduct or transport sugars and other organic material throughout plant are called:
a. Tracheids
b. Companion cells
c. Sieve elements
d. Phloem parenchyma cells

Q.34 Food in plants is transported in the form of:
a. Monosaccharide
b. Disaccharide
c. Polysaccharide
d. Oligosaccharide

Q.35 Chordae tendinae are extension of:
a. Heart
b. Auricles
c. Ventricles
d. Sinus venosus

Q.36 95% of the cytoplasm of RBCs is:
a. Carbonic anhydrase
b. Salts
c. Myoglobin
d. Hemoglobin

Q.37 Liver receives deoxygenated blood with absorbed food from alimentary canal through:
a. Mesenteric artery
b. Hepatic artery
c. Hepatic vein
d. Hepatic portal vein

Q.38 Highest blood pressure is found in:
a. Aorta
b. Pulmonary trunk
c. Superior vena cava
d. Inferior vena cava

Q.39 All are functions of lymphatic system except:
a. Transport fat
b. Blood filtration
c. Provide immunity
d. Filtration of urea

Q.40 Return of lymph from lower leg is assisted by:
a. Lymph nodes
b. Calf muscles
c. Venous valves
d. Cytokines

Q.41 These represent antigen binding sites on antibody molecule:
a. Variable segment
b. Constant segment
c. Hinge region
d. Receptor region

Q.42 Active artificial immunization is provided by:
a. Antiserum
b. Interferon
c. Vaccine
d. Antibiotic

Q.43 Shivering thermogenesis is which type of adaptations?
a. Structural
b. Behavioral
c. Physiological
d. Histological

Q.44 Which part of juxtamedullary nephron is found in inner medulla?
a. Bowman's capsule
b. 1st convoluted part
c. Loop of Henle
d. 2nd convoluted part

Q.45 This process of urine formation is highly selective:
a. Filtration
b. Ultrafiltration
c. Reabsorption
d. Secretion

Q.46 ADH and aldosterone are involved in reabsorption of substances respectively by acting on:
a. PCT and DCT
b. Ascending limb and descending limb
c. Collecting duct and loop of Henle
d. Bowman's capsule and glomerulus

Q.47 The environment where the animals produce large volumes of diluted urine is:
a. Hypotonic aquatic
b. Hypertonic aquatic
c. Isotonic aquatic
d. Terrestrial

Q.48 Sarcolemma is primarily made up of:
a. Lipoprotein
b. Glycoprotein
c. Glycolipids
d. Nucleoproteins

Q.49 I-band in skeletal muscle contains:
a. Thick filaments only
b. Thin filaments only
c. Mainly thick and partly thin
d. Mainly thin and partly thick

Q.50 During muscle contraction, H-zone disappears due to increase in:
a. Muscle length
b. Length of myosin
c. Overlapping of actin and myosin
d. Lengthening of sarcomere

Q.51 Collection of cell bodies of neurons in PNS is called:
a. Nerve
b. Ganglion
c. Gray matter
d. White matter

Q.52 These cells secrete testosterone under influence of LH:
a. Follicle cells
b. Germinal cells
c. Interstitial cells
d. Sertoli cells

Q.53 Hypothalamus produces all of the following hormones except:
a. ADH
b. SRF
c. Oxytocin
d. Prolactin

Q.54 Total number of parathyroid glands in human body is:
a. 1
b. 2
c. 3
d. 4

Q.55 All of the following actions are related with adrenaline except:
a. Vasodilation at skeletal muscle
b. Vasoconstriction at gut
c. Increase in cardiac output
d. Release of glucose from liver

Q.56 All of the following start at puberty except:
a. Spermatogenesis
b. Oogenesis
c. Ovulation
d. Menstrual cycle

Q.57 A hormone that causes thickening of uterus in secretory phase is:
a. FSH
b. LH
c. Estrogen
d. Progesterone

Q.58 It is an STD caused by RNA virus:
a. Gonorrhea
b. Syphilis
c. Genital herpes
d. AIDS

Q.59 _____ is the chance of an event to occur.
a. Probability
b. Pleiotropy
c. Dominance
d. Epistasis

Q.60 All of the following traits of pea plant are dominant except:
a. Purple flowers
b. Terminal flowers
c. Green pod
d. Yellow seed

Q.61 Dominance is physiological effect of an allele over its partner allele occupying:
a. Same locus on same chromosome
b. Same locus on respective homologue
c. Different locus on same chromosome
d. Different locus on respective homologue

Q.62 A test cross between plants of 'Tt' and 'tt' genotypes will produce:
a. All tall plants
b. 50% tall, 50% dwarf
c. All dwarf plants
d. 75% tall, 25% dwarf

Q.63 If in a dihybrid cross, Mendel had used two such characters which have linked, he would have faced difficulty in explaining the results on the basis of his:
a. Law of segregation
b. Law of multiple factor hypothesis
c. Law of independent assortment
d. Law of dominance

Q.64 _____ form one linkage group on human chromosome 11.
a. Colour blindness, gout and albinism
b. Sickle cell anaemia, leukemia and albinism
c. Colour blindness, hemophilia and gout
d. Sickle cell anemia, albinism and hemophilia

Q.65 The gene of which of the following protein are present on autosome?
a. Red opsin
b. Clotting factor XI
c. Clotting factor IX
d. Clotting factor VIII

Q.66 In Avery's experiment, the transforming ability was lost when they added:
a. Proteases
b. DNAase
c. RNAase
d. Methyl transferase

Q.67 Which of the following feature is not associated with DNA polymerase III?
a. It can add nucleotides only to 3' end of parent strand
b. It can initiate synthesis of new strand on its own
c. It needs primer to add nucleotides
d. It proceeds replication from 5' to 3' on a growing strand

Q.68 Which of the following statement is correct regarding tRNA?
a. Its 3' end binds with –COOH group of amino acid
b. Its 3' end binds with $–NH_2$ group of amino acid
c. Its 5' end binds with –COOH group of amino acid
d. Its 5' end binds with $–NH_2$ group of amino acid

Q.69 In the process of transcription, the strand of DNA with polarity _____ acts as a _____ strand.

a. $5' \rightarrow 5'$, Coding strand
b. $3' \rightarrow 5'$, Template Strand
c. $3' \rightarrow 3'$, Coding strand
d. $5' \rightarrow 3'$, Template strand

Q.70 How many codons can specify arginine?

a. 2
b. 3
c. 4
d. 6

Q.71 Transcription is initiated when RNA polymerase binds at:

a. Primer
b. Promoter
c. Start codon
d. Initiation complex

Q.72 Darwin believed in:

a. Inheritance of acquired characters
b. Special creation by nature
c. Perceived unity in life
d. Evolution due to catastrophe

Q.73 Fossil record shows that earliest vertebrates were:

a. Bacteria
b. Fishes
c. Amphibians
d. Echinoderms

Q.74 Organs which have functional similarity but are structurally different:

a. Analogous organs
b. Homologous organs
c. Vestigial organs
d. Degenerated organs

Q.75 Restriction enzyme EcoR1 cuts the DNA to produce:

a. Palindromic sequence
b. Flanking site
c. Sticky ends
d. Blunt ends

Q.76 PCR uses DNA polymerase that is commonly extracted from:

a. Viruses
b. Bacteria
c. Fungi
d. Humans

Q.77 Maxam Gilbert method is used to find:

a. Sequence of genes on chromosome
b. Karyotype of an individual
c. Sequence of nucleotides in a gene
d. Genotype & phenotype of an individual

Q.78 Plants having foreign DNA incorporated into their cells are called:

a. Clone plants
b. Transgenic plants
c. Parthenocarpic plants
d. Mutant giants

Q.79 DNA segments of different lengths can be separated by a process of:

a. Western blotting
b. Northern blotting
c. Autoradiography
d. Gel electrophoresis

Q.80 In which process, multiple copies of the desired gene are produced?

a. Polymerase chain reaction
b. Gene sequencing
c. Analyzing DNA
d. DNA finger printing

NMDCAT

SUPER FINAL PAPER–3

Total MCQs: 200 **Max. Marks: 200**

CHEMISTRY

Q.81 The e/ m value of positive rays is maximum for
a. Helium
b. Nitrogen
c. Oxygen
d. Hydrogen

Q.82 The limiting line of Balmer series lies in
a. Visible region
b. I.R region
c. U.V region
d. X-rays region

Q.83 When 25 g lime stone ($CaCO_3$) is heated then 7g CaO is formed. What is %age yield of given reaction $CaCO_3 \longrightarrow CaO + CO_2$
a. 40 %
b. 50 %
c. 75 %
d. 100 %

Q.84 With increase in the value of principal quantum number 'n' the shape of the p – orbitals remain same although their sizes
a. Decrease
b. Remain the same
c. Increase
d. May or may not remain the same

Q.85 Total number of oxygen atoms present in 32 g sulphur dioxide (S = 32, O = 16)
a. 6.02×10^{22}
b. 6.02×10^{23}
c. 3.1×10^{22}
d. 3.1×10^{23}

Q.86 The weight of a single atom of oxygen is
a. 5.057×10^{23} g
b. 1.556×10^{23} g
c. 2.656×10^{-23} g
d. 4.538×10^{-23} g

Q.87 The formula used to find out the number of electrons in a sub-shell is
a. n^2
b. $2(2l + 1)$
c. $2\,n^2$
d. $2l + 1$

Q.88 Mathematically, Boyle's law can be represented as
a. $V \propto \frac{1}{P}$
b. $P_1V_1 = P_2V_2$
c. $PV = K$
d. All of these

Q.89 The root mean square velocity (Cr.m.s) of gas molecules is given by the relation
a. $C_{rms} = \sqrt{\frac{RT}{M}}$
b. $C_{rms} = \sqrt{\frac{2RT}{M}}$
c. $C_{rms} = \sqrt{\frac{3RT}{M}}$
d. $C_{rms} = \sqrt{\frac{8RT}{M}}$

Q.90 The momentary attraction between the molecules of a liquid caused by instantaneous dipole and induced –dipole attractions are called
a. Dipole-dipole forces
b. London dispersion forces
c. Polar forces
d. Debye forces

Q.91 The strongest H-bonding is present among the molecules of which of the following substance
a. Ammonia
b. Water
c. Hydrogen fluoride
d. Ethanol

Q.92 Which one of the following is an example of polar molecular solid
a. Naphthalene
b. Iodine
c. Dry ice
d. Sucrose

Q.93 In the structure of NaCl, each sodium ion is surrounded by chloride ions
a. 4
c. 6
b. 5
d. 8

Q.94 The relationship between Kp and Kc for the following reaction is

$H_{2(g)} + 1/2\ O_{2(g)} \rightleftharpoons H_2O_{(g)}$

a. $Kp = Kc\ (RT)^{1/2}$ b. $Kc = Kp\ (RT)^{1/2}$

c. $Kc = Kp\ (RT)^{-1/2}$ d. $Kp = Kc\ RT$

Q.95 Maximum yield of ammonia can be obtained during Haber's process by

a. Continuous withdrawal of reaction mixture b. Increasing temperature

c. Increasing pressure d. All of above

Q.96 During the manufacture of nitric acid, nitric oxide is oxidized to nitrogen dioxide. This reaction is given as

$$2NO_{(g)} + O_{2(g)} \rightleftharpoons 2NO_{2(g)} \quad \Delta H = -114 kJ/mol$$

According to Le Chatelier's Principle

a. Reaction must not be temperature dependent

b. Reaction must be carried out at room temperature

c. Reaction must be carried out at low temperature

d. Reaction must be carried out at high temperature

Q.97 What is the correct relation between pH and pKa?

a. $pH = pKa + \log\left[\frac{Acid}{Salt}\right]$ b. $pH = pKb + \log\left[\frac{Salt}{Acid}\right]$

c. $pH = pKa - \log\left[\frac{Acid}{Salt}\right]$ d. $pKa = pH + \log\left[\frac{Salt}{Acid}\right]$

Q.98 Rate of first order reaction depends on _____:

a. Concentration of one reactant

b. Concentration of two reactants

c. Concentration of three reactants

d. Independence of the initial concentration

Q.99 A radioactive sample disintegrates 87.5% after 9 years. What will be the half-life of the sample

a. 5 Years b. 2 Years

c. 3 Years d. 10 Years

Q.100 If the reactants or product of a chemical reaction can absorb ultraviolet, visible or infra-red radiation then the rate of a chemical reaction can best be measured by which one of the following methods?

a. Chemical method b. Graphical method

c. Spectrometry d. Differential method

Q.101 When the change in concentration is 6×10^{-4} moldm^{-3} and time for that change is 10 seconds, the rate of reaction will be

a. 6×10^{-3} moldm^{-3} sec^{-1} b. 6×10^{-2} moldm^{-3}sec^{-1}

c. 6×10^{-4} moldm^{-3} sec^{-1} d. 6×10^{-5} moldm^{-3}sec^{-1}

Q.102 Which of the following is correct representation of enthalpy of formation

a. $Mg_{(s)} + ½\ O_{2(g)} \rightarrow MgO_{(s)}$ $\Delta H^o_f = -692\ kJmol^{-1}$

b. $Mg_{(s)} + O_{2(g)} \rightarrow MgO_{(s)}$ $\Delta H^o_f = -692\ kJmol^{-1}$

c. $2Mg_{(s)} + O_{2(g)} \rightarrow 2MgO_{(s)}$ $\Delta H^o_f = -692\ kJmol^{-1}$

d. All of these

Q.103 A spontaneous process is:

a. Unidirectional and irreversible b. Unidirectional and real

c. Irreversible and real d. All of above

Q.104 Combustion of graphite to form CO_2, can be done by two ways. Reactions are given as follow

$C + O_2 \longrightarrow CO_2$ $\Delta H = -393.7\ kJmol^{-1}$

$C + ½\ O_2 \longrightarrow CO$ $\Delta H_1 = ?$

$CO + ½\ O_2 \longrightarrow CO_2$ $\Delta H_2 = -283\ kJmol^{-1}$

a. $-676\ kJ\ mol^{-1}$ b. $+110\ kJ\ mol^{-1}$

c. $-110\ kJ\ mol^{-1}$ d. $676\ kJ\ mol^{-1}$

Q.105 Study the following redox reaction:

$$10Cl^- + 16H^+ + 2MnO_4^- \rightarrow 5Cl_2 + 2Mn^{+2} + 8H_2O$$

Which statement is true about this reaction?

a. Manganese is oxidized from +7 to +2. b. Chlorine is reduced from zero to -1

c. Chloride ions are reduced from -1 to zero d. Manganese is reduced from +7 to +2

Q.106 The E° value of standard zinc half-cell is -0.76V, measured when it is connected with SHE i.e. Standard hydrogen electrode. In this case the half reaction taking place at SHE is

(a) $2H^+_{(aq)} + 2e^- \longrightarrow H_{2(g)}$ b. $H_{2(g)} \longrightarrow 2H^+_{(aq)} + 2e^-$

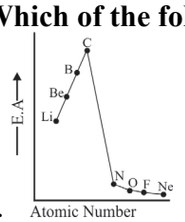
(c) $2H^+_{(aq)} + 2e^- \longrightarrow 2H_{(g)}$ d. $H_{2(g)} \longrightarrow 2H_{(g)} + 2e^-$

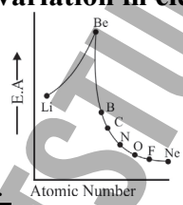
Q.107 Which one of the following behave as a redox reaction?

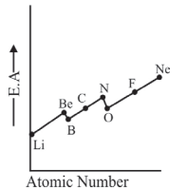
a. $NaCl + AgNO_3 \rightarrow NaNO_3 + AgCl$ b. $2Na + Cl_2 \rightarrow 2NaCl$

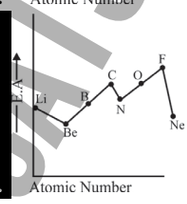
c. $2Br^- \rightarrow Br_2 + 2e^-$ d. $K^+ + 1e^- \rightarrow K$

Q.108 Which of the following is correct graph for variation in electron affinity values

a. 

b. 

c. 

d. 

Q.109 Which one is correct order about 1st I.E.

a. Al > Mg > Na b. Mg > Al > Na

c. Na > Mg > Al d. Al > Na > Mg

Q.110 VSEPR theory explains shapes and geometries of molecule. The superiority of VBT on VSEPR is

a. VBT explains shapes of molecules more accurately

b. VBT also explains the reason for bond formation

c. VBT explains paramagnetic behaviour of certain molecules

d. VBT explains the coordinate covalent bond formation

Q.111 Which of the following does not react with water even when red hot at high temperature

a. Mg b. Be

c. Ca d. Na

Q.112 Across the short period the melting and boiling point increase upto

a. IIIA group b. IVA group

c. VA group d. VIA group

Q.113 Which of the following is the most reactive alkali metal

a. Lithium c. Sodium

b. Potassium d. Cesium

Q.114 The outer electronic configuration of an atom is $3d^5$, $4s^1$, the atom is

a. Manganese b. Chromium

c. Iron d. Vanadium

Q.115 Paramagnetic behavior of atoms, ions or molecules is due to:

a. Paired electrons b. Protons

c. Unpaired electrons d. Neutrons

Q.116 Oxidation state of 'Fe' in $K_3[Fe(CN)_6]$ is:

a. +2 b. -6

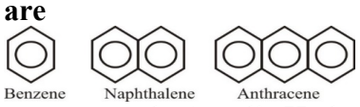
c. -3 d. +3

Q.117 Which one of the following pairs can be cis-trans isomer to each other?

a. CH_3-CH=CH-CH_3 and H_3C-CH=CH-CH_3 b. $CHCl=CCl_2$ and $CH_2=CH_2$

c. $CHCl=CH_2$ and $CH_2=CHCl$ d. CH_3-CH_3 and $CH_2=CH_2$

Q.118 The given three hydrocarbons are



a. Alicyclic hydrocarbons
b. Acyclic Hydrocarbons
c. Aromatic hydrocarbons
d. Heterocyclic hydrocarbons

Q.119 The type of structural isomerism which arises due to the difference in the nature of carbon chain or carbon skeleton is

a. Chain isomerism
b. Cis-Trans isomerism
c. Position isomerism
d. Optical isomerism

Q.120 For hydration of ethene the intermediate compound is

a. Methyl hydrogen sulphate
b. Ethyl hydrogen sulphate
c. Ethylene hydrogen sulphate
d. Vinyl hydrogen sulphate

Q.121 1% alkaline $KMnO_4$ solution is a

a. Strong oxidizing agent
b. Mild oxidizing agent
c. Locating agent
d. Reducing agent

Q.122 Acetone is prepared by the hydration of propyne through formation of

a. Propanol
b. Propyne
c. Propen-2-ol
d. Propane

Q.123 In nitration of benzene NO_2^+ is an electrophile. It is produced by

a. Conc. HNO_3 + Conc. H_2SO_4
b. Dil. HNO_3 + Dil. H_2SO_4
c. Conc. HNO_3 + Dil. H_2SO_4
d. Dil. HNO_3 + Conc. H_2SO_4

Q.124 Which of the following is produced by the action of CH_3Cl on benzene in presence of $AlCl_3$ followed by oxidation in the presence of acidified $KMnO_4$ give

a. Toluene
b. ortho-Xylene
c. meta-Xylene
d. Benzoic acid

Q.125 Which of the following alkyne shows acidic character

a. 2-Butyne
b. Ethyne
c. 1-Butyne
d. Both b and c

Q.126 Iso-butyl chloride has following carbon attached to chloro group

a. Tertiary
b. Secondary
c. Quaternary
d. Primary

Q.127 Isopropyl chloride undergoes reaction by

a. S_N1 or S_N2 mechanism
b. Neither S_N1 nor S_N2 mechanism
c. S_N1 mechanism only
d. S_N2 mechanism only

Q.128 Consider the reaction given below:

$$CH_3 - CH_2Br \xrightarrow[alcohol]{KOH} H_2C = CH_2 + HBr$$

Mechanism followed by the reaction is:

a. E2
b. S_N1
c. E1
d. S_N2

Q.129 The order of reactivity of alcohols when C – O bond breaks

a. Primary > secondary > tertiary
b. Secondary > tertiary > primary
c. Tertiary > Primary > secondary
d. Tertiary > secondary > primary

Q.130 Picric acid is

a. Monocarboxylic acid
b. Dicarboxylic acid
c. Aromatic carboxylic acid
d. Phenol derivative

Q.131 In CH_3CH_2OH, the bond that undergoes heterolytic cleavage most readily is

a. O – H
b. C – H
c. C – O
d. C – C

Q.132 Glucose and acetaldehyde give silver mirror test with Tollen's reagent. It shows presence of

a. Ketonic group
b. Aldehydic group
c. Alcoholic group
d. Acidic group

Q.133 Cyanohydrin of which of the following will yield lactic acid

a. HCHO
b. CH_3COCH_3
c. CH_3CH_2CHO
d. CH_3CHO

Q.134 Sodium borohydride reduces _____ to alcohols

a. Propene
b. Propanoic acid
c. Propanal
d. Propane

Q.135 Oxidation of alkenes in presence of hot $KMnO_4$ solution, the products obtained can be

a. Ketones
b. Carboxylic acids
c. Carbon dioxide
d. Glycol

Q.136 $CH_3COOH + NH_3 \xrightarrow{Heat} ?$ **the final product (s) formed**

a. $CH_3CONH_2 + CO_2$
b. $CH_3CONH_2 + H_2O$
c. $CH_3CONH_2 + H_2$
d. $CH_3CONH_2 + HCl$

Q.137 $CH_3CONH_2 \longrightarrow CH_3CH_2NH_2 + H_2O$ **which of following reagent is used for given conversion**

a. $NaBH_4$ / Ether
b. H_2 / Ni
c. $LiAlH_4$ / Ether
d. $KMnO_4$ / H_2SO_4

Q.138 Collagen proteins are present in _____ throughout the body.

a. Muscle
b. Tendons
c. Red blood cell
d. Blood plasma

Q.139 Many enzymes contain a protein part and non-protein part. The non-protein part is known as

a. Co-enzyme
b. Co-factor
c. Apoenzyme
d. Both a and b

Q.140 Enzymes are of great biological importance and are of great help in the diagnosis of certain diseases. Which of the following enzyme is raised in heart diseases.

a. Lactic dehydrogenase
b. Phosphatase
c. LDH-1
d. Alkaline phosphates

NMDCAT

SUPER FINAL PAPER–3

Total MCQs: 200 **Max. Marks: 200**

PHYSICS

Q.141 If velocity of a body changes by equal amount in equal intervals of time, the body is said to have:

a. Uniform velocity
b. Uniform acceleration
c. Variable acceleration
d. Gravitational acceleration

Q.142 A cricket ball of mass 0.5 kg strikes a bat normally with a velocity of 30 ms^{-1} and rebounds with a velocity of 20 ms^{-1} in the opposite direction. The impulse of the force exerted by the ball on the bat is

a. 0.5 Ns
b. 1.0 Ns
c. 25 Ns
d. 50 Ns

Q.143 At maximum height on the trajectory which of projectile becomes zero

a. Acceleration
b. Vertical velocity
c. Velocity
d. Horizontal velocity

Q.144 If an object is moving with constant velocity of 20ms^{-1} towards north then its acceleration will be

a. 5 ms^{-2}
b. 10ms^{-2}
c. 9ms^{-2}
d. 0ms^{-2}

Q.145 The momentum of a moving body is increased by 30%, then %age increase in K.E is

a. 30%
b. 69%
c. 49%
d. 89%

Q.146 An automobile is moving forwards with uniform velocity due to the force 1000 N exerted by its engine, then force of friction on the moving automobile will be?

a. 0 N
b. 500 N
c. 1000 N
d. 2000 N

Q.147 In a certain situation, $\vec{F}$ and $\vec{S}$ are not equal to zero but the work done is zero. If $\vec{F}$ have only x-component then what we conclude about displacement

a. $\vec{S}$ have only x-component
b. $\vec{S}$ have non-zero x and y-components
c. $\vec{S}$ have non-zero y and z-components
d. $\vec{S}$ have non-zero x and z-components

Q.148 3 kg stone falls from 20m high platform. Find its falling speed at 10m height.

a. 196 ms^{-1}
b. 14 ms^{-1}
c. 10 ms^{-1}
d. 100 ms^{-1}

Q.149 Angular speed of minute hand of mechanical watch is:

a. $\pi / 30 \text{ rad min}^{-1}$
b. $\pi / 2 \text{ rad min}^{-1}$
c. $\pi \text{ rad min}$
d. None of these

Q.150 The angular displacement is

a. Always vector quantity
b. Vector quantity for small value of θ
c. Vector quantity for large value of θ
d. Never a vector quantity

Q.151 The shaft of a motor rotates at a constant angular speed of 360rev/min. Angle turned through in 1 sec in radian is

a. π
b. 6π
c. 3π
d. 12π

Q.152 If a rotating body is moving counter clockwise with decreasing angular velocity, then direction of angular acceleration will be

a. In the direction of angular velocity
b. In the direction opposite to angular velocity
c. Along the axis of rotation
d. Both 'b' and 'c'

Q.153 A string of length 2 m fixed between two supports vibrates in 1st overtime. The distance between node and antinode is:

a. 50 cm
b. 100cm
c. 200cm
d. 10cm

Q.154 An observer moves towards a stationary source of sound, with a velocity one fifth of the velocity of sound. What is the percentage increase in the apparent frequency?

a. Zero
b. 5%
c. 0.5%
d. 20%

Q.155 Trough of a wave acts as:

a. Concave lens
b. Convex lens
c. Convex mirrors
d. Plane mirror

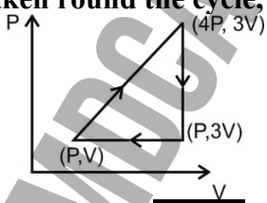
Q.156 When source is moving towards observer with velocity u_s then the modified frequency 'f_c' will be

a. $f_c = f\left[\frac{v - u_s}{v}\right]$
b. $f_c = f\left[\frac{v}{v + u_s}\right]$
c. $f_c = f\left[\frac{v}{v - u_s}\right]$
d. $f_c = f\left[\frac{v + u_s}{v}\right]$

Q.157 If one mole of an ideal gas is heated at constant pressure, then the first law of thermodynamics can be written as:

a. $C_p\Delta T = C_v\Delta T + P\Delta V$
b. $C_p\Delta T = C_v\Delta T + V\Delta P$
c. $C_v\Delta T = Cp\Delta T + P\Delta T$
d. $\Delta C_v T = \Delta C_v T + P\Delta V$

Q.158 An ideal monatomic gas has taken round the cycle, work done during the cycle is:



a. Zero
b. 3 PV
c. 6PV
d. 9PV

Q.159 The distance between the plates of a parallel plate capacitor is 2.0 mm and area of each plates is 2.0 m^2. A potential difference of 1.0×10^{-4} V is applied across the plates. Find the capacitance.

a. 4×10^4F
b. 8.85×10^{-9}F
c. 3.54×10^9F
d. 9.0×10^{-4}F

Q.160 One Kg m $sec^{-2}C^{-1}$ is equal to

a. J-sec
b. Wb m^2
c. Vm^{-1}
d. Fm^{-1}

Q.161 Force experienced per unit positive test charge at a point in an electric field is the definition of:

a. Electric potential energy
b. Electric potential
c. Electric field strength
d. Electric field

Q.162 When a charge "Q" on a capacitor is doubled then energy stored "U" will:

a. 2 U
b. 3U
c. U/2
d. 4U

Q.163 Temperature of conductor increases. The product of resistivity and conductivity

a. Increases
b. Remains same
c. Decreases
d. First increases then decreases

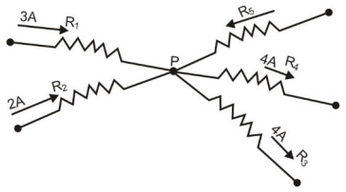
Q.164 If length of the wire becomes two time to the original value and area becomes one half to its original value, then resistance of the wire becomes:

a. Double
b. Four times
c. One half
d. One fourth

Q.165 It is a unit type resistance device for measuring potential differences:

a. Galvanometer
b. Ohmmeter
c. Ammeter
d. Potentiometer

Q.166 Consider the circuit diagram in which a mesh is shown carrying currents in each resistor. What is the current passing through "R_5"?



a. 10A
b. 3A
c. 6A
d. 2A

Q.167 A charged particle enters in combined electric and magnetic field. $\vec{E} \perp \vec{B}$ of strength 5 N/C and 2.0 T. If $F_m = F_e$ then speed of charged particle will be

a. 5 ms^{-1}
b. 10ms^{-1}
c. 2.5 ms^{-1}
d. 15 ms^{-1}

Q.168 Smallest unit of magnetic flux density is

a. Wbm^{-2}
b. Tesla
c. $NA^{-1}\ m^{-1}$
d. Gauss

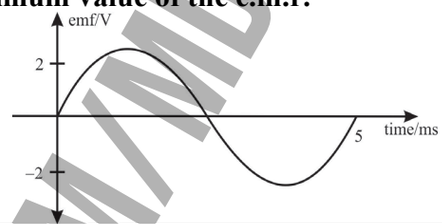
Q.169 Which of following law explain the dependence of emf established in a coil and the change in magnetic flux?

a. Lenz's law
b. Faraday's law
c. Ampere's law
d. Both Faraday's and Ampere's law

Q.170 Primary and secondary coils of a transformer have 50 and 200 turns respectively. When primary is connected to 9-volt battery secondary voltage is

a. 90
b. 18
c. 36
d. Zero

Q.171 The diagram shows how the e.m.f. of a simple generator varies with time. What is the frequency and the maximum value of the e.m.f?



	Frequency / Hz	Maximum e.m.f. / V
a.	200	2.0
b.	400	2.0
c.	200	4.0
d.	400	4.0

Q.172 Which of the remain constant in a transformer?

a. Current
b. Potential
c. Power
d. Frequency

Q.173 During the interval $0 \rightarrow \frac{T}{2}$ the forward biased diode offers

a. Very small resistance
b. Very high resistance
c. Very small current flow through it
d. Zero resistance

Q.174 In a bridge rectifier how many diode conducts during each half cycle of input A.C

a. 2
b. 1
c. 3
d. All

Q.175 Calculate the energy of a photon of frequency 3.0 $\times 10^{18}$ Hz. (h = 6.63 $\times$ 10^{-34}Js)

a. 19.89 $\times$ 10^{-18} J
b. 11.89 $\times$ 10^{-16} J
c. 1.89 $\times$ 10^{-16} J
d. 19.89 $\times$ 10^{-16} J

Q.176 What is the de Broglie wavelength of a proton whose linear momentum has a magnitude of 3.3 $\times$ 10^{-23} kgm/s?

a. 0.0002 nm
b. 0.002 nm
c. 0.02 nm
d. 0.2 nm

Q.177 When electron jumps from n^{th} to the p^{th} orbit in an hydrogen atom then the wavelength of the emitted radiation is given by

a. $\frac{1}{\lambda} = R_H\left[\frac{n^2 - p^2}{p^2 n^2}\right]$

b. $\frac{1}{\lambda} = R_H\left[\frac{1}{n^2} - \frac{1}{p^2}\right]$

c. $\frac{1}{\lambda} = \frac{1}{R_H}\left[\frac{1}{p^2} - \frac{1}{n^2}\right]$

d. $\frac{1}{\lambda} = \frac{1}{R_H}\left[\frac{1}{4^2} - \frac{1}{n^2}\right]$

Q.178 A radioactive nuclide decays by emitting an α-particle and a γ-ray photon, the change in the nucleon number will be:

a. –4

b. –2

c. –2

d. –3

Q.179 During the decay of radioactive isotopes $^{232}_{90}X$ to a stable isotope, six α-particles and four β-particles are emitted, what is the atomic number 'Z' and mass number 'A' of the stable isotopes:

a. Z = 70, A = 220

b. Z = 82, A = 212

c. Z = 78, A = 212

d. Z = 82, A = 208

Q.180 In which of the following decays atomic number increases

a. α

b. β^+

c. β^-

d. λ

NMDCAT

SUPER FINAL PAPER–3

Total MCQs: 200 **Max. Marks: 200**

ENGLISH

SPOT THE ERROR:

In the first type of sentences, some segments of each sentence are underlined. Your task is to identify that underlined segment of the sentence, which contains the mistake that needs to be corrected.

Q.181 The main effort should focus **to find** a solution to the conflict rather than persisting with
a. b. c. d.
the current situation. **(A-on finding)**

Q.182 She peered around corners and snooped in vacant desks searching for anything that might
a. b. c.
be deemed **to incriminate.** **(D-incriminating)**
d.

Q.183 I did remember the rummage sale to which I sent all my old clothes, including a coat that
a. b.
had got mixed up with them by accident, and that I believe I **could wear** again.
C. **d.**
(D-could have worn)

Q.184 What has God not **blessed me**? Health, peace of mind, freedom from care; I have
a. **b.** c.
everything one can desire. **(B-blessed me with)**
d.

Q.185 She had looked at the combs without the least hope of owning them. And now they were
a. b.
her, but her hair was gone. **(C-hers / Pronoun)**
c. d.

Q.186 In 1918, the American Society of Letters honoured his name by **finding** the O. Henry
a. **b.**
Memorial Award, which gives an annual rize for the best American short story.
c. d. **(B-founding)**

Q.187 His father as a young man had been one of **Napoleon conscripts** and had won the Cross
a. **b.** c.
of the Legion of Honor on the field of battle, for valor and fidelity.
d. **(B-Napoleon's conscripts)**

Q.188 With that chain on his watch, Jim could look at his watch and **know** the time anywhere
a. b. **c.**
he might be. **(C–learn)**
d.

CORRECTION:

In each of the following questions, four alternative sentences are given. Choose the **CORRECT** one and fill the Circle corresponding to that letter in the MCQ Response Form.

Q.189

a. MY teacher's zest for math makes class fun and **excited** for everyone.
b. My teacher's zest **of** math makes class **funny** and exciting for everyone.
c. My teacher's zest for math makes class **funny** and exciting for everyone.
d. My teacher's zest for math makes class fun and exciting for everyone.

Q.190

a. The car yielded when the lanes merged and allowed the other cars **pass** ahead.
b. The car yielded when the lanes merged and allowed the other cars to pass ahead.
c. The car yielded when the lanes merged and allowed the other cars **passed** ahead.
d. The car yielded when the lanes merged and allowed the other cars **passing** ahead.

Q.191

a. Evil and harsh, the wicked stepmother **whips** Cinderella with a belt until she **will bleed**.
b. Evil and harsh, the wicked stepmother **whipped** Cinderella with a belt until she **had** bled.
c. Evil and harsh, the wicked stepmother would whip Cinderella with a belt until she bled.
d. Evil and harsh, the wicked stepmother **had** whipped Cinderella with a belt until she **bleeded**.

Q.192

a. The **elegant cultivating** beard was long the prerogative of royalty and the privileged classes.
b. The **elegant** cultivated beard was long the prerogative of royalty and the privileged classes.
c. The elegantly **cultivating** beard was long the prerogative of royalty and the privileged classes.
d. The elegantly cultivated beard was long the prerogative of royalty and the privileged classes.

Q.193 That was a fine shock you gave us. The sentence is an example of:

a. Intransitive
b. Mono transitive
c. Complex transitive
d. Di transitive

Q.194

a. When he awoke, for he **seemed asleep**, he found himself in bed.
b. When he **awakened**, for he seemed to be asleep, he found himself in bed.
c. When he **woke up**, for he seemed to be asleep, he found himself in bed.
d. When he awoke, for he seemed to have been asleep, he found himself in bed.

Q.195

a. He was both more and less experienced than the youngest boy **may well be**.
b. He was both more and less experienced than the youngest boy **may be well**.
c. He was both more and less experienced than the youngest boy might well be.
d. He was both more and less experienced than the youngest boy **might be well.**

Q.196 "Don't waste time", the teacher said to the students. The indirect form of the speech?

a. The teacher **forbade** the students not to waste time.
b. The teacher advised the students not to waste time.
c. The teacher told the students **to not** waste time.
d. The teacher **ordered** the students **do not** waste time.

Sentence Completion

Fill in the blanks with appropriate word.

Q.197 Julie's purse was made by one of the best Italian designers, and _____it cost her three months' salary.

A. Since
B. Hence
c. Even though
d. Yet

Q.198 The singer's career might have been on the decline, but his online popularity _____grew by a huge percentage.

a. Ironically
b. Regrettably
c. Deplorably
d. Paradoxically

Synonyms

Choose the word that is most nearly **SIMILAR** in meaning to the word in capital letters.

Q.199 MENACES

a. Dotards
b. Hazards
c. Freaks
d. Boons

Antonyms

Choose the word **OPPOSITE** in meaning to CAPITALIZED word given above.

Q.200 STABLE

a. Brawny
b. Fishy
c. Slovenly
d. Rickety